

***Leporinus falcipinnis* n.sp., a new species from the lower rio Tapajos basin, Para, Brazil (Pisces, Characiformes, Anostomidae)**

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Leporinus falcipinnis n.sp., a new species from the lower rio Tapajos basin, Para, Brazil (Teleostei, Characiformes, Anostomidae). - The new species is described and figured. It belongs to the *fasciatus*-group and is characterized by the high number of rather narrow transverse bands, its fili-form dorsal and its deeply forked caudal fin with elongated, pointed lobes.

Key-words: Systematics - Teleostei - Anostomidae - new species - South America.

INTRODUCTION

During a fish photographing trip to the rio Arapiuns, organized by Rainer Stawikowski, local fishermen near a fazenda on this river displayed their daily catch including two remarkable specimens of a *Leporinus* species strangely resembling to some members of Hemiodidae. On this occasion one specimen was photographed and purchased, and despite a further visit to the Arapiuns, no additional specimens were found. The new species described here is therefore based on the unique preserved specimen. We are conscious that such a description is fragmentary, as no osteological details could be studied, the juvenile colour pattern and, mainly, the sexual dimorphism in this species remain unknown. But it may encourage further investigations in the rio Arapiuns.

METHODS

Measurements and terminology follow GÉRY *et al.* (1987). For the colour pattern description, the transverse bands on body are numbered as follows (the first bar, clearly just behind the occiput, counted as the first one on body): Nuchal (1), humeral (2), predorsal (3), dorsal (4, between dorsal and ventral fins, sometimes prolonged onto the fin), postdorsal (5), preanal (6), anal (7), between adipose fin and end of anal fin (8, sometimes prolonged onto the fins), peduncular (9) and precaudal (10) (cf. BLOCH 1794, plate Nr.379).

DESCRIPTION

***Leporinus falcipinnis* n.sp.**

Figs 1 - 6

Locality: Holotype MZUSP 51827 (Mus.Zool.,Univ.Sao Paulo), male, 220 mm standard length (S.L.), rio Arapiuns, 1 hour by boat downstream mouth of rio Arua, small fazenda at right shore, lower Tapajos basin, Para, Brazil (2°4'S, 55°38'W), 4.X.1992, leg. R. Stawikowski et al.

D i a g n o s i s : The species belongs to the *fasciatus*-group as defined by GÉRY (1978) and discussed below, characterized by the presence of at least 8 transverse bands. It differs from all described species by the combination of the following characteristics: number of vertical transverse bands (13 total), scales counts (7/38-39+3/6), and, at least in males, morphology of caudal (deeply forked, falciform) and dorsal fins (third ray filiform).

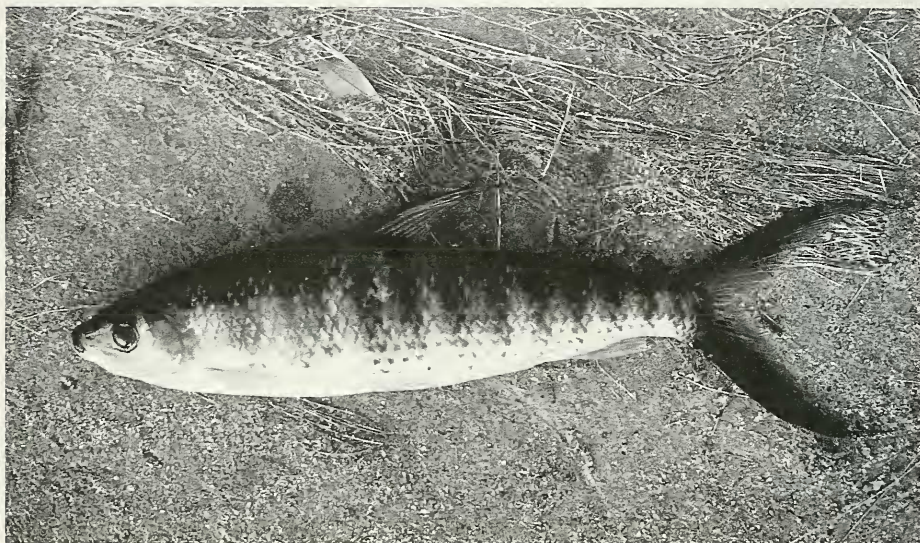


FIG.1

Leporinus falcipinnis n.sp., coloration of the freshly-dead specimen (photo S. Muller)

D e s c r i p t i o n : Body medium sized, 220 mm S.L.; body depth 3.9 times in S.L.; head 4.5 times in S.L.; eyes small, orbital diameter 4.5 times in head length and 1.9 times in interorbital distance, which is 2.3 times in head length; snout short and blunt, 2.5 times in head length. Dorsal profile convex from tip of snout to dorsal fin, straight between dorsal fin and adipose fin, slightly concave between adipose and caudal fin. Ventral profile gently convex between snout tip and caudal fin. Gill opening wide, about 10 gill rakers on lower half of first branchial arch.

Mouth terminal, both lips vertically papillose (forming vertical ribs), teeth 4/4 on each side (fig. 5).

Lateral line with 38 (right side) or 39 (left side) +3 perforated scales, 7 scales between lateral line and dorsal fin, 6 scales between lateral line and pelvics, 17 predorsal scales in an irregular row, 11 scales between last dorsal fin ray and adipose, 11 scales between ventral fin and anus, 20 preventral scales; axillary scale long, half as long as the unbranched ray of the pelvic fin; anal fin base without any series of scales. Caudal peduncle with 16 circumferencial scales; some scales at the base of the median caudal fin rays. Dorsal fin ii 10, last unbranched ray filiform, its length 3 times in standard length; pectoral fin i 14, longest reaching to 9th scale, origine of pectoral fin below 1st and 2nd branched dorsal ray; pelvic fin obliquely truncate, i 9; anal fin obliquely truncate, short, clearly not reaching base of caudal fin, ii 8; outer rays of caudal fin strongly elongate, deeply notched, both lobes of equal length. Number of vertebrae 35 (21 caudal ones), plus urostyle.

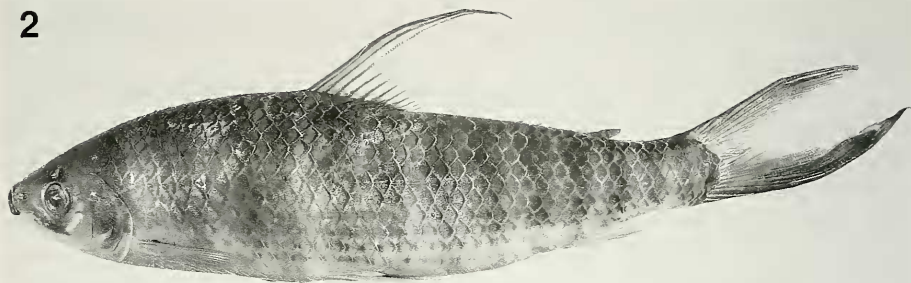
Colour of specimens (fixed in formaldehyde, transfered into alcohol) (fig. 2): Ground colour of dorsal parts brownish. Two transverse bands on head (snout and eyes), one on occiput (numbered 1, see discussion below), 11 transverse or very slightly oblique ones on dorsum, and a vertical, crescent shaped band on the last precaudal scales, totalling 13 bands, as compared with a total of 10 bands in adults *Leporinus fasciatus* (Bloch). Second band divided on dorsum, third one deeply divided, but confluent below lateral line; two preanal bands joining on venter, two bands reaching base of anal fin; on the ventral part, below the bands two (anteriorly) to eight (in front of anal fin), some lines of brown spots. Dorsal fin (except dark unbranched rays), pectoral, pelvic and anal fins hyaline; a dark axillary spot at base of pectoral fins; outer rays of caudal fin dark, other parts greyish; adipose fin brown.

Colour of the freshly-dead specimen (fig.1): Ground colour bluish black, with some golden reflections on flanks, transversal bands nearly black; head ventrally yellowish, venter yellowish white; dorsal, adipose and caudal fins dark (greyish to nearly black), pectoral and pelvic fins yellow, anal fin hyaline, with yellow base.

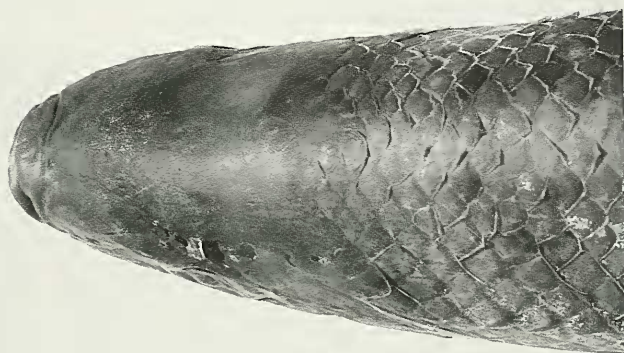
Measurements (in mm): standard length 220; greatest body depth 57.0; head length 48.4; head depth 38.6; vertical orbital diameter 11.3; interorbital distance 21.3; snout length 19.0; interopercular distance 29.6; predorsal distance 103.5; caudal peduncle, length 28.1, depth 21.9; distance end of dorsal fin to adipose fin 59.4; dorsal-fin base, length 31.4; of third unbranched dorsal ray 73.0; pectoral fin, length 36.4; ventral fin, length 38.0; anal fin, length 31.6; mouth width at tip of dentaries 12.6.

Habitat and distribution: The water level of the rio Arapiuns was very low in October 1992, at the moment of the capture of this new *Leporinus*. The black water river was slowly running, clear and quiet. Besides some Serrasalminidae, different big cichlid species were displayed by the local fishermen (field notes and slides). Some small species of Characoidea (belonging to the genera *Hoplias*, *Nannostomus*, *Pyrrhulina*, *Hemiodopsis*, *Hemigrammus*, *Bryconops*, *Iguanodectes* et *Tytto-brycon*) and of Cichlidae (*Aequidens mauessanus* was recently described by KULLANDER 1997) were caught near the riverbanks. The conditions were drastically different three

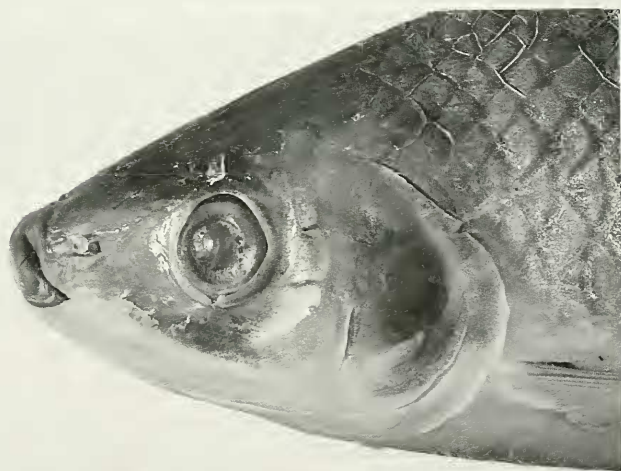
2



3



4



FIGS 2-4

Leporinus falcipinnis n. sp.: total view of preserved specimen (slightly curved) (2), dorsal (3) and lateral (4) view of head (Photos C. Ratton).

years later: the water level was very high, the fazenda deserted as was the village near the falls upstream, no fish could be observed (R. Stawikowski, pers. comm.).

Exact distribution of *L. falcipinnis* n.sp. is unknown, however the species might be common in the Tapajos basin, as suggested by an underwater photograph representing probably this species (ROGGO 1996, p.55 fig.2).

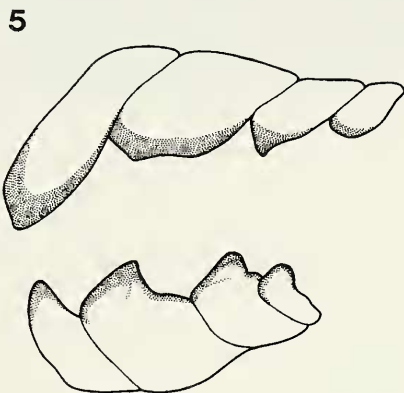


FIG. 5

Leporinus falcipinnis n.sp.: upper and lower tooth range.

DISCUSSION

The *fasciatus*-group (GÉRY 1978) includes the type species of the genus, *Leporinus novemfasciatus* Spix in Spix & Agassiz from Brazil (which is considered by most authors as a synonym of *Salmo fasciatus* Bloch from "Surinam"), and at least *affinis* Günther, *latofasciatus* Steindachner, *octofasciatus* Steindachner and *tigrinus* Borodin (GÉRY *et al.* 1987).

The colour pattern, consisting in transverse bands on body, seems to be a basic one in the genus *Leporinus*. Most of the species are striped when young, and several ones retain that pattern in adult.

Usually, there are 2 black bands on the snout and between the eyes, plus sometimes a black mark on the upper lip and (or) on the maxillary. They are followed by several bands, the first one constant, but the number of the others may vary, depending on age, by the division of some bands in the older fishes.

The species of the *fasciatus*-group are differentiated by the following characters:

1) transverse scale numbers low, 4/3.5:

L. latofasciatus Steindachner, 1910 (only one juvenile known from "Orinoco"); dorsal fin in the middle of the body; bands 1-4 very broad, 3 times in the space between them, bands 5-7 slightly narrower, about 2 times in the space between them; tooth number unknown.

2) transverse scale numbers 5-7/4-6, number of maxillary teeth 3:

L. tigrims Borodin, 1929; scales 6-7/39-41/5-6 (SANTOS & JÉGU 1989; 6/39-40/5 in the original description, see BRITSKI & GARAVELLO 1978; 6/36/6: one type specimen, according to Roberts, in BRITSKI & GARAVELLO 1978); number of dentary teeth 4; the 3 or 4 middle transverse bands in Y, according to the description; loc. typ. "Goyaz, Brazil"; Tocantins-Araguaia basin (GARAVELLO 1979, cited after SANTOS & JÉGU 1989) (possibly the fish of the lower fig. p. 160 in GÉRY 1978, under the name "*fasciatus*-group").

L. octofasciatus Steindachner, 1915; scales 5/35-39/4-5; number of dentary teeth 4 (rarely 3 or 5); 8 transverse bands: bands strictly vertical, not very broad, equalling the space between them (BRITSKI & GARAVELLO 1978); loc. typ. "near Joinville, Santa Catarina"; upper fig. p. 160 in GÉRY 1978, under the name "*fasciatus*".

3) transverse scale number 6-9/5-8; number of maxillary teeth 4

L. affinis Günther, 1864; scales 8-9/42-44/6-8; number of dentary teeth 4; 8 transverse bands; dorsal and caudal fins not elongate, anal fin rounded and quite long (GÜNTHER 1864; SANTOS & JÉGU 1989) (loc. typ. "rio Capim, Para"; restricted by SANTOS & JÉGU 1989 to the Tocantins- Araguaia basin; this restriction without any commentary on the type locality is subject to discussions, since it does not satisfy the recommendation 72H of the ICZN).

L. fasciatus (Bloch, 1794); scales 6-7.5/40-45/5-6 (BRITSKI & GARAVELLO 1978; SANTOS & JÉGU 1996); number of dentary teeth 4: 8 (juveniles) to 10 (adults) broad and slightly inclined transverse bands; dorsal and caudal fins not elongate (loc.typ. "Surinam"; Guianas and Amazon basin: SANTOS & JÉGU 1996)

Leporinus falcipinnis n.sp. seems most closely related to *L. fasciatus* as defined by BRITSKI & GARAVELLO (1978) and SANTOS & JÉGU (1996), from the Guianas rivers, and the basins of the Madeira, Solimoes, Negro, Trombetas and Uatuma, but not from the Tocantins where it is said to be replaced by *L. affinis* (SANTOS & JÉGU 1989), and possibly not from the upper Tapajos.

The new species shares with *L. fasciatus* the scale counts and the teeth number and possesses an even higher number of transverse bands. It differs by its somewhat more elongate body and more rounded snout, a slightly shorter anal fin, and a different colour pattern (arrangement and number of transverse bands on body, 13 in total vs. 10 in total), but particularly by the shape of caudal and dorsal fins. This last characteristic also distinguishes *L. falcipinnis* n.sp. from all other members of the *fasciatus*-group.

Some other multi-banded species had been described in the genus *Leporinus*, but they are of uncertain identity:

The description of *Leporinus multifasciatus* Cope, 1878 mentions 14 vertical bands on the body and a rounded caudal spot. The three type specimens of this species are juveniles of 57mm max.S.L. "in very poor condition", with broken fins, fide FOWLER (1906). They have the typical colour pattern of most young *Leporinus*. This species differs clearly from *falcipinnis* n.sp. by its low scale counts (4/36/5). The photo taken by Harald Schultz and labelled *Leporinus mltifasciatus* in AXELROD *et al.* (1985, fig.6 p.121), showing 11 bands in total, may represent a large specimen of *L. fasciatus* with the fifth band split, somewhat like that in the original figure of BLOCH.



FIG. 6

Leporinus falcipinnis n.sp.; X-ray-photograph (photo S. Muller).

Leporinus fasciatus altipinnis Borodin, 1929 from Jatuarana, Solimoes, is said to have 6/5 transverse scale counts and 8 transverse body bands. *Leporinus holostictus* Cope, 1878, known from two juvenile fishes (the largest ca 90 mm SL) in poor conditions from upper Amazon (collected by James Orton in 1877, possibly near Pebas "below the mouth of the Rio Napo"), seems to have the same tooth number and a similar scale count as *L. falcipinnis* n.sp. (6/41/5), but possesses only 8 transverse body bands.

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